ABSTRACT

An optical transmission device suitable for a high-speed and large-capacity optical transmission system. An optoelectronic waveguiding device including an optical waveguide layer and cladding layers each having a larger band gap than that of the optical waveguide are deposited above and beneath the optical waveguide layer formed on a semiconductor substrate. The waveguide and cladding layers comprise optical waveguides each having a MQW structure in a direction of a light propagation axis of the optical waveguide layer. Among these optical waveguides, there exists first and second optical waveguides, whose layer structures may be mutually different. The optoelectronic waveguiding device maybe characterized in that an optical waveguide made of a bulk crystal exists in a connection part between the MQW structure waveguides each having a different layer structure. The specific connected optoelectronic waveguiding device elements may include semiconductor lasers, modulators and/or amplifiers.